VOLUME VII.

SUBJECT INDEX.

Address.
Annual—by the President, Charles B. Dudley, 9.
Alloy.
The History and Development of the — Practice in the United States as Applied to Railway Bearings. G. H. Clamer, 302.
American Society for Testing Materials.
Advisory Committees, 706.
Annual Report of the Executive Committee of the —, 713.
By-Laws of the — 640.
Charter of the —, 638.
Contents of Previous Publications of the —, 720.
Deceased Members of the —, 704.
General Information Concerning the —, 646.
Geographical Distribution of Members of the —, 704.
List of Members of the —, 651.
Officers, Members of the Executive Committee, and Standing Committees of the —, 650.
Past Officers of the —, 705.
Report of Auditing Committee of the —, 716.
Rules Governing the Executive Committee of the —, 643.
Standard Specifications Adopted by the —, 730.
Technical Committees of the —, 707.
Angles.
Tension Tests of Steel —. F. P. McKibben, 287.
Beams.
The Effect of Time Element in Loading Reinforced Concrete —. W. K. Hatt, 421.
Bearings.
The History and Development of the Alloy Practice in the United States as Applied to Railway —. G. H. Clamer, 302.
Bitumens.
The Development of the Penetrometer as Used in the Determination of the Consistency of Semi-Solid —. Clifford Richardson and C. N. Forrest, 626. Discussion, 632.
Bond.
Tests of — between Steel and Concrete. T. L. Condron 445. Discussion, 464.
Brick Pier.
Notes on — Tests. J. E. Howard, 475.

Bureau of Standards.
The National —. S. W. Stratton, 324. Discussion, 334.
Carbon.
Does the Removal of Sulphur and Phosphorus Lessen the Segregation of — ? H. M. Howe, 75.
Castings.
Some Causes of Failure in Service of Steel —. Robert Job, 296. Discussion, 300.
Cement.
Avoidable Causes of Variation in — Testing. E. B. McCready, 349. Discussion, 360.
Labor-Saving Devices in a — Laboratory. R. E. Bakenhus, 379.
Some Problems of a — Inspecting Laboratory. R. S. Greenman, 355. Discussion, 360.
Standard Specifications for —. Report of Committee C, 131. Discussion, 132.
The Control of Physical Test Results in Portland —. W. A. Aiken, 371. Discussion, 375.
The Effect of Oil on — Mortar. R. C. Carpenter, 398. Discussion, 401.
The Specific Gravity of Portland —. R. K. Meade and L. C. Hawk, 363. Discussion, 369.
Cement Mortar.
See **Cement.**
Coal.
The Recent Testing of — Used by the Federal Government in its Public Buildings in Washington. J. A. Holmes and D. T. Randall, 537. Discussion, 572.
The Purchase of — under Specifications. J. E. Woodwell, 543. Discussion, 572.
Methods of Testing —. S. S. Voorhees, 560. Discussion, 572.
Coke.
Standard Specifications for —. Report of Committee J, 147.
Columns.
Notes on some Additional Tests of Concrete —. J. E. Howard, 394.
Tests of Concrete —. A. N. Talbot, 382.
Combined Stresses.
See **Stresses.**
Committee Reports.
Auditing Committee, 716.
Committee A, on Standard Specifications for Iron and Steel, 39.
Committee C, on Standard Specifications for Cement, 131. Discussion, 132.
Committee E, on Preservative Coatings for Iron and Steel, 140.
Committee I, on Reinforced Concrete, 145.
Committee J, on Standard Specifications for Coke, 147.
Committee, K, on Standard Methods of Testing, 150.

Committee Reports (Continued).
Committee M, on Standard Specifications for Staybolt Iron, 157. Discussion, 159.
Committee N, on Standard Tests for Lubricants, 161.
Committee O, on Uniform Speed in Commercial Testing, 162.
Committee P, on Fireproofing Materials, 170. Discussion, 171.
Committee Q, on Standard Specifications for the Grading of Structural Timber, 181.
Committee S, on Waterproofing Materials, 193.
Committee T, on the Tempering and Testing of Steel Springs and Standard Specifications for Spring Steel, 195. Discussion, 200.
Committee U, on the Corrosion of Iron and Steel, 209.
Concrete (see also **Cement**).
Investigation of the Thermal Conductivity of Different — Mixtures and the Effect of Heat upon their Strength and Elastic Properties. Ira H. Woolson, 404. Discussion, 419.
Notes on Cold Twisted Steel Rods for — Reinforcement. J. J. Shuman, 434. Discussion, 441.
Notes on Some Additional Tests of — Columns. J. E. Howard, 394.
Tests of Bond between Steel and —. T. L. Condron, 445. Discussion, 464.
Tests of — Columns. A. N. Talbot, 382.
The Effect of Time Element in Loading Reinforced — Beams. W. K. Hatt, 421.
Conductivity.
Investigation of the Thermal — of Different Concrete Mixtures and the Effect of Heat upon their Strength and Elastic Properties. Ira H. Woolson, 404. Discussion, 419
Connecting Rods.
Compressive and Transverse Tests of Steel —. Gaetano Lanza, 281.
Continuous Open-Hearth Process.
Rail Steel as Manufactured by the —. Benjamin Talbot, 48.
Corrosion.
Report of Committee U on the — of Iron and Steel, 209.
The — of Iron. Allerton S. Cushman, 211. Discussion, 238.
The Influence of Stress upon the — of Iron. W. H. Walker and Colby Dill, 229. Discussion, 238.
Dividers.
Multiplying — for Locating Yield Point. J. A. Capp, 624.
Endurance.
Notes on the — of Steels under Repeated Alternate Stresses. J. E. Howard, 252.
The White-Souther — Test Specimen. Henry Souther, 616. Discussion, 623.
Enforcement.
The — of Specifications. Annual Address by the President, Charles B. Dudley. 19.

Fireproofing.
Report of Committee P on — Materials, 170. Discussion, 171.
Standard Test for — Floor Construction, 179.

Heat.
Investigation of the Thermal Conductivity of Different Concrete Mixtures and the Effect of — upon their Strength and Elastic Properties. Ira H. Woolson, 404. Discussion, 419.
The — Treatment of Medium Carbon Steel. The Effect of Rate of Cooling on Structure. William Campbell, 240.

Impact.
A New — Machine. L. W. Page, 601.

International Association for Testing Materials.
By-Laws of the —, 733.
General Information Concerning the —, 644.
Officers of the —, 732.
Technical Problems, Committees and Referees of the —, 737.

Iron.
Corrosion of —. Allerton S. Cushman, 211. Discussion, 238.
Corrosion of — and Steel. Report of Committee U, 209.
Preservative Coatings for — and Steel. Report of Committee E, 140.
Some Causes of Failure in Service of — Castings. Robert Job, 296. Discussion, 300.
Standard Specifications for — and Steel. Report of Committee A, 39.
Tests of Staybolts and Staybolt —. E. L. Hancock, 273.
The Influence of Stress upon the Corrosion of —. W. H. Walker and Colby Dill, 229. Discussion, 238.

Legislation.
Paint —. E. F. Ladd, 523. Discussion, 535.

Lubricants.
Standard Tests for —. Report of Committee N, 161.

Materials.
Fireproofing —. Report of Committee P, 170. Discussion, 171.
Waterproofing —. Report of Committee S, 193.
Work done in the Structural — Testing Laboratories, U. S. Geological Survey, During the Year Ending June 1, 1907. R. L. Humphrey, 336.

Methods of Testing.
Standard —. Report of Committee K, 150.

Moist Closet.
A Novel —. E. B. McCready, 598.

Moisture.
The Effect of — and other Extrinsic Factors upon the Strength of Wood. H. D. Tiemann, 582.

Natural Cement.
See **Cement.**

Oil.
Priming Coats for Metal Surfaces. Linseed — vs. Paint. F. P. Cheesman, 479.
The Effect of — on Cement Mortar. R. C. Carpenter, 398. Discussion, 401.
Open-Hearth Process.
Rail Steel as Manufactured by the Continuous —. Benjamin Talbot, 48.
Paint (see also **Preservative Coatings**).
Deleterious Ingredients in —. L. S. Hughes, 486. Discussion, 489.
— Legislation. E. F. Ladd, 523. Discussion, 535.
Priming Coats for Metal Surfaces. Linseed Oil vs. —. F. P. Cheesman, 479.
The Physical Properties of — Films. R. S. Perry, 511.
Penetrometer.
The Development of the — as Used in the Determination of the Consistency of Semi-Solid Bitumens. Clifford Richardson and C. N. Forrest, 626. Discussion, 632.
Phosphorus.
Does the Removal of Sulphur and — Lessen the Segregation of Carbon? H. M. Howe, 75.
Portland Cement.
See **Cement.**
Preservative Coatings (see also **Paint**).
Report of Committee E on — for Iron and Steel, 140.
President's Address.
See **Address.**
Priming Coats.
— for Metal Surfaces. Linseed Oil vs. Paint. F. P. Cheesman, 479.
Proceedings.
Summary of — of the Tenth Annual Meeting, 9.
Rails.
General Discussion on Steel —, 87.
Mechanical Experience with Limber and Stiff — Sections. P. H. Dudley, 54.
Standard Specifications for Steel —, 44.
Steel — as Manufactured by the Continuous Open-Hearth Process. Benjamin Talbot, 48.
Raw Material.
The — Supply. P. H. Knight and C. E. Skinner, 314.
Reinforced Concrete (see also **Concrete**).
Report of Committee I on —, 145.
The Effect of Time Element in Loading — Beams. W. K. Hatt, 421.
The Testing of Wooden and — Telegraph Poles. R. A. Cummings, 595.
Repeated Alternate Stresses.
Notes on the Endurance of Steels under —. J. E. Howard, 252

Rods (see also **Connecting Rods**).
Notes on Cold Twisted Steel — for Concrete Reinforcement. J. J. Shuman, 434. Discussion, 441.
Segregation.
Does the Removal of Sulphur and Phosphorus Lessen the — of Carbon? H. M. Howe, 75.
Specifications.
Enforcement of —. Charles B. Dudley, 19.
Standard — for Steel Rails, 44.
Standard — for Structural Timber, 187.
Standard — adopted by the American Society for Testing Materials, 730.
The Purchase of Coal under —. J. E. Woodwell, 543. Discussion, 572.
Specific Gravity.
The — of Portland Cement. R. K. Meade and L. C. Hawk, 363. Discussion, 369.
Speed of Testing.
See **Testing.**
Standard Specifications.
See **Specifications.**
Staybolt Iron.
Sandard Specifications for —. Report of Committee M, 157. Discussion, 159.
Tests of Staybolts and —. E. L. Hancock, 273.
Staybolts.
See **Staybolt Iron.**
Steel.
Compressive and Transverse Tests of — Connecting Rods. Gaetano Lanza, 281.
Corrosion of Iron and —. Report of Committee U, 209.
Effect of Combined Stresses on the Elastic Properties of —. E. L. Hancock, 258.
General Discussion on— Rails, 87.
Note on Cold Twisted — Rods for Concrete Reinforcement. J. J. Shuman, 434. Discussion, 441.
Notes on the Endurance of — under Repeated Alternate Stresses. J. E. Howard, 252.
Preservative Coatings for Iron and —. Report of Committee E, 140.
Standard Specifications for Iron and —. Report of Committee A, 39,
Tension Tests of — Angles with Various Types of End Connections. F. P. McKibben, 287.
Tests of Bond between — and Concrete. T. L. Condron, 445. Discussion, 464.
The Heat Treatment of Medium Carbon —. The Effect of Rate of Cooling on Structure. William Campbell, 240.

Steel Springs.
Tempering and Testing of — and Standard Specifications for Spring Steel. Report of Committee T, 195. Discussion, 200.

Stresses.
Effect of Combined — on the Elastic Properties of Steel. E. L. Hancock, 258.
Notes on the Endurance of Steels under Repeated Alternate. J. E. Howard, 252.
The Influence of — upon the Corrosion of Iron. W. H. Walker and Colby Dill, 229. Discussion, 238.

Sulphur.
Does the Removal of — and Phosphorus Lessen the Segregation of Carbon? H. M. Howe, 75.

Telegraph Poles.
The Testing of Wooden and Reinforced Concrete —. R. A. Cummings, 595.

Tension Tests.
— of Steel Angles. F. P. McKibben, 287.

Testing (see also **Tests**).
Avoidable Causes of Variation in Cement —. E. B. McCready, 349. Discussion, 360.
Methods of — Coal. S. S. Voorhees, 560. Discussion, 572.
Physical — of Oil Varnishes. J. C. Smith, 499. Discussion, 507.
Tempering and — of Steel Springs. Report of Committee T, 195. Discussion, 200.
The Recent — of Coals used by the Federal Government in its Public Buildings in Washington. J. A. Holmes and D. T. Randall, 537. Discussion, 572.
The Structural Materials — Laboratories, U. S. Geological Survey. Progress During the Fiscal Year Ending June 1, 1907. Richard L. Humphrey, 336.
The — of Wooden and Reinforced Concrete Telegraph Poles. R. A. Cummings, 595.
Uniform Speed in Commercial —. Report of Committee O, 162.

Testing Machine.
See **Impact.**

Tests.
An Instrument for Measuring Deformation in — of Materials. H. F. Moore, 607.
Compressive and Transverse — of Steel Connecting Rods. Gaetano Lanza, 281.
Notes on Brick Pier —. J. E. Howard, 475.
Notes on Some Additional — of Concrete Columns. J. E. Howard, 394.
Standard — for Fireproof Floor Construction, 179.
Standard — for Lubricants. Report of Committee N, 161.

Tests (Continued).
— of Bond between Steel and Concrete. T. L. Condron, 445, Discussion, 464.
—of Concrete Columns. A. N. Talbot, 382.
— of Staybolts and Staybolt Iron. E. L. Hancock, 273.
The Control of Physical — Results in Portland Cement. W. A. Aiken, 371. Discussion, 375.
The White-Souther Endurance—Specimen. Henry Souther, 616. Discussion, 623.
Tension — of Steel Angles. F. P. McKibben, 287
Timber.
Standard Specifications for the Grading of Structural —. Report of Committee Q, 181.
Standard Specifications for Structural —, 187.
Time Element.
The Effect of — in Loading Reinforced Concrete Beams. W. K. Hatt, 421.
Varnishes.
Physical Testing of Oil —. J. C. Smith, 499. Discussion, 507.
Waterproofing.
Report of Committee S on — Materials, 193.
Wood (see also **Timber**).
The Effect of Moisture and other Extrinsic Factors upon the **Strength** of —. H. D. Tiemann. 582.
Yield Point.
Multiplying Dividers for Locating —. J. A. Capp, 624.

AUTHOR INDEX.

Aiken, W. A.
Report of Committee S on Waterproofing Materials, 193.
The Control of Physical Test Results in Portland Cement, 371.
Bakenhus, R. E.
Labor Saving Devices in a Cement Laboratory, 379.
Belden, A. W.
Report of Sub-Committee on Methods of Sampling and Analysis, 149.
Bement, A.
Discussion, 578.
Bostwick, W. A.
Discussion, 112.
Boynton, C. W.
Discussion, 401, 403.
Bright, H. De H.
Discussion, 203, 208.
Brown, John G.
Discussion, 172, 420, 464.
Brown, S. A.
Discussion, 401, 402.
Brown, William L.
Discussion, 204, 206.
Bunnell, F. O.
Discussion, 637.
Campbell, William.
The Heat Treatment of Medium Carbon Steel. The Effect of Rate of Cooling on Structure, 240.
Capp, John A.
Discussion, 573, 574.
Multiplying Dividers for Locating Yield, 624.
Carhart, P. E.
Discussion, 113.
Carpenter, R. C.
The Effect of Oil on Cement Mortar, 398.
Cheesman, F. P.
Priming Coats for Metal Surfaces—Linseed Oil vs. Paint, 479.
Discussion, 489.
Christie, James.
Report of Sub-Committee on Tensile Tests, 151.
Church, S. R.
Discussion, 636, 637.

Churchill, C. S.
Discussion, 109.
Clamer, G. H.
The History and Development of the Alloy Practice in the United States as Applied to Railway Bearings, 302.
Condron, T. L.
Tests of Bond Between Steel and Concrete, 445.
Discussion, 464, 470.
Cummings, Robert A.
A Test of Wooden and Reinforced Concrete Telegraph Poles, 595.
Cushman, Allerton, S.
Report of Committee U on the Corrosion of Iron and Steel, 209.
The Corrosion of Iron, 211.
Discussion, 238, 495.
Dill, Colby.
Influence of Stress upon the Corrosion of Iron, 229.
Diller, H. E.
Discussion, 577.
Douty, D. E.
Discussion, 174, 175.
Dow, A. W.
Report of Committee S on Waterproofing Material, 193.
Dudley, Charles B.
Annual Address by the President:—The Enforcement of Specifications, 19.
Annual Report of the Executive Committee, 713.
Discussion, 119, 128, 200, 207, 238, 572, 573, 575, 576, 577.
Dudley, P. H
Mechanical Experiences with Limber and Stiff Rail Sections, 54.
Discussion, 90.
Evans, S. M.
Discussion, 535.
Forrest, C. N.
The Development of the Penetrometer as used in the Determination of the Consistency of Semi-Solid Bitumens, 626.
Discussion, 635, 636, 637.
Forsyth, William.
Discussion, 129, 300.
Fowler, W. E.
Discussion, 126.
French, J. B.
Discussion, 441, 443.
Gill, A. H.
Report of Committee N on Standard Tests for Lubricants, 161.
Greenman, R. S.
Some Problems of a Cement Inspecting Laboratory, 355.
Discussion, 137.

Hancock, E. L.
Effect of Combined Stresses on the Elastic Properties of Steel, 258.
Tests of Staybolts and Staybolt Iron, 273.
Hatt, W. K.
Notes on the Effect of Time Element in Loading Reinforced Concrete Beams, 421.
Report of Sub-Committee on Impact Tests, 154.
Report of Committee Q on Standard Specifications for the Grading of Structural Timber, 181.
Discussion, 623.
Hawk, Lester C.
The Specific Gravity of Portland Cement, 363.
Heckel, G. B.
Discussion, 497.
Holmes, J. A.
The Recent Testing of Coals used by the Federal Government in its Buildings in Washington, 537.
Howard, J. E.
Notes on the Endurance of Steels under Repeated Alternate Stresses, 252.
Notes on Some Additional Tests of Concrete Columns, 374.
Discussion, 109.
Howe, H. M.
Does the Removel of Sulphur and Phosphorus Lessen the Segregation of Carbon? 75.
Hughes, L. S.
Deleterious Ingredients in Paint, 486.
Humphrey, Richard L.
Report of Committee C on Standard Specifications for Cement, 131.
Discussion, 134, 138, 171, 172, 173, 419, 420.
Report of Committee I on Reinforced Concrete, 145.
The Structural Materials Testing Laboratories, United States Geological Survey, St. Louis, Mo., Progress During Fiscal Year Ending June, 1, 1907, 336.
Hunt, R. W.
Discussion, 93, 114
Jeffers, J. M.
Report of Committee N on Standard Tests for Lubricants, 161.
Job, Robert.
Iron Castings: Some Causes of Failure in Service, 296.
Discussion, 300, 498, 507.
Jones, M. T.
Discussion, 92.
Kenny, E. F.
Discussion, 112, 119.

Kinkead, J. A.
Report of Committee T on the Tempering and Testing of Steel Springs and Standard Specifications for Spring Steel, 195.
Discussion, 111, 159, 200, 203, 206, 207, 575, 577.
Knight, P. H.
The Raw Material Supply, 314.
Kreuzpointner, Paul.
Report of Committee O on Uniform Speed in Commercial Testing, 162.
Ladd, E. F.
Paint Legislation, 523.
Lanza, Gaetano.
Compressive and Transverse Tests of Steel Connecting Rods, 281.
Report of Committee K on Standard Methods of Testing, 150.
Discussion, 200, 205, 623.
Lesley, Robert W.
Discussion, 132, 135, 175, 177, 370, 402, 576.
Little, A. D.
Discussion, 572, 575, 578.
McCready, Ernest B.
Some Avoidable Causes of Variation in Cement Testing, 349.
Discussion, 360, 375.
A Novel Moist Closet, 598.
McKenna, C. F.
Discussion, 135.
McKibben, Frank P.
Tension Tests of Steel Angles with Various Types of End Connections, 287.
McNaughton, Malcolm
Discussion, 496.
Marburg, Edgar.
Annual Report of the Executive Committee, 713.
Report of Committee A on Standard Specifications for Iron and Steel, 39.
Discussion, 160, 335, 623, 637.
Marshall, William.
Discussion, 497, 535.
Meade, Richard K.
The Specific Gravity of Portland Cement, 363.
Discussion, 402.
Merriman, Mansfield.
Report of Sub-Committee on Compressive Tests, 156.
Discussion, 115, 177, 334, 636.
Miller, R. P.
Discussion, 173, 176, 177.
Moldenke, Richard.
Report of Committee J on Standard Specifications for Coke, 147.
Report of Sub-Committee on Transverse Tests, 153.
Discussion, 300.

Moore, H. F.
An Instrument for Measuring Deformation of Materials, 607.
Nelson, E. D.
Discussion, 159, 160.
Page, L. W.
A New Impact Machine, 601.
Perry, R. S.
The Physical Properties of Paint Films, 511.
Price, C. E.
Discussion, 362, 369.
Quimby, H. H.
Discussion, 443, 465.
Randall, D. T.
The Recent Testing of Coals used by the Federal Government in its Public Buildings in Washington, 537.
Discussion, 572, 574, 577.
Richardson, Clifford.
The Development of the Penetrometer as used in the Determination of the Consistency of Semi-Solid Bitumens, 626.
Discussion, 635.
Rodgers, S. M.
Discussion, 207.
Sabin, A. H.
Discussion, 507.
Shuman, Jesse J.
Notes on Cold Twisted Steel Rods for Concrete Reinforcement, 434.
Discussion, 441, 442.
Skinner, C. E.
The Raw Material Supply, 314.
Discussion, 160, 334, 335, 498.
Smith, J. C.
The Physical Testing of Oil Varnishes, 499.
Discussion, 509.
Snow, J. P.
Discussion, 127.
Souther, Henry.
White-Souther Endurance Test Specimen, 616.
Discussion, 201, 205, 623
Stevenson, A. A.
Discussion, 200.
Stratton, S. W.
The National Bureau of Standards, 324.
Discussion, 334.
Swain, George F.
Report of Committee C on Standards Specifications for Cement, 131.
Talbot, Arthur N.
Tests of Concrete Columns, 382,
Discussion, 466.

Talbot, Benjamin.
On Rail Steel as Manufactured by the Continuous Open-Hearth Process, 48.
Discussion, 87.
Thacher, Edwin.
Discussion, 466.
Thackray, G. E.
Discussion, 117, 119.
Thompson, G. W.
Discussion, 493, 495.
Thompson, S. E.
Discussion, 178.
Tiemann, Harry D.
The Effect of Moisture and Other Extrinsic Factors upon the Strength of Wood, 582.
Trimble, R.
Discussion, 117.
Turneaure, F. E.
Report of Committee I on Reinforced Concrete, 145.
Von Schrenk, Hermann.
Report of Committee Q on Standard Specification for the Grading of Structural Timber, 181.
Voorhees, S. S.
Methods of Testing Coal, 560.
Report of Committee E on Preservative Coatings for Iron and Steel, 140.
Discussion, 495, 508, 575, 577, 637.
Walker, Joseph F.
Report of Committee E on Preservative Coatings for Iron and Steel, 140.
Walker, William H.
Report of Committee U on the Corrosion of Iron and Steel, 209.
Influence of Stress upon the Corrosion of Iron, 229.
Walter, L. W.
Discussion, 136, 137, 369, 401, 403.
Webster, George S.
Discussion, 136.
Webster, William R.
Report of Committee A on Standard Specifications for Iron and Steel, 39.
Discussion, 87.
Whinery, S.
Discussion, 632.
Wickhorst, M. H.
Discussion, 119, 128, 159, 238, 496, 572.

Wille, H. V.
Discussion, 99.
Report of Committee M on Standard Specifications for Staybolt Iron, 157.
Woodwell, J. E.
The Purchase of Coal under Specification, 543.
Discussion, 572, 576.
Woolson, Ira H.
Report of Committee P on Fireproofing Materials, 170.
Discussion, 171, 172, 175, 176, 178, 420, 443.
Investigation of the Thermal Conductivity of Different Concrete Mixtures and the Effect of Heat upon their Strength and Elastic Properties, 404.
Zehnder, C. H.
Report of Committee J on Standard Specifications for Coke, 147.